

XAL based PV Browser

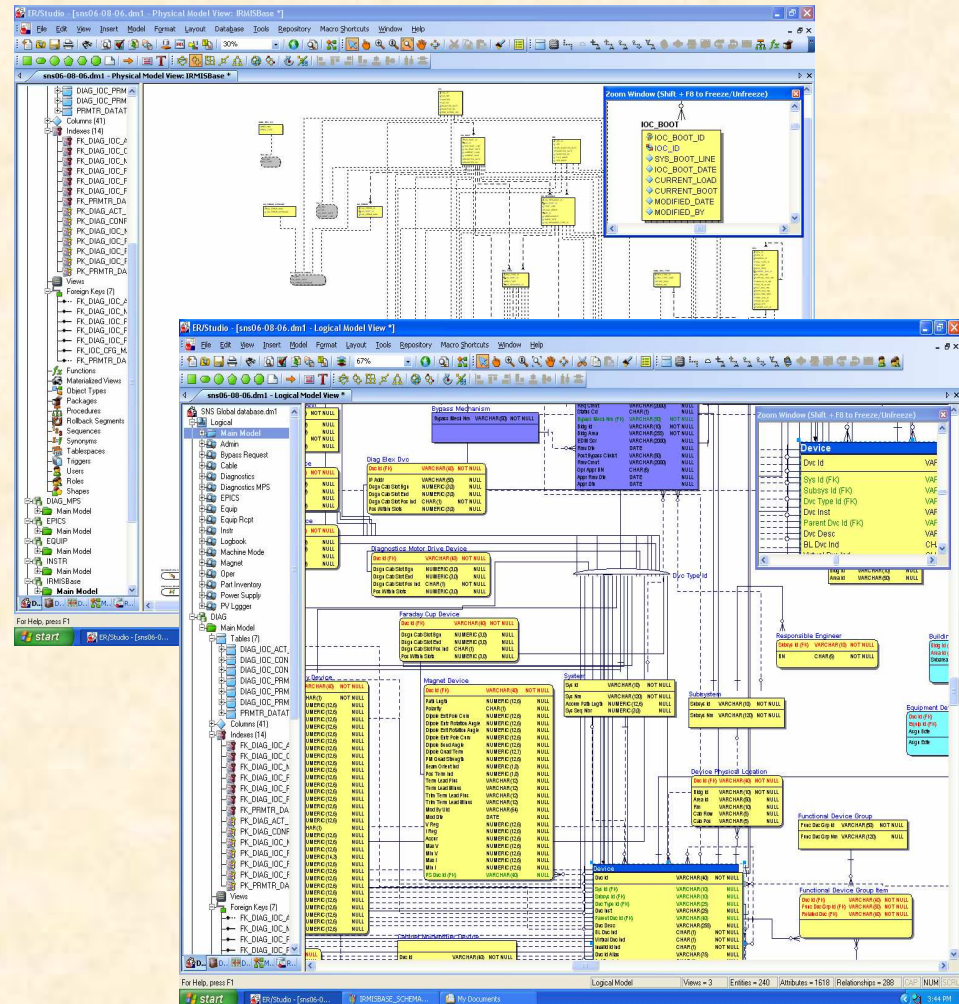
Jeff Patton, Chris Fowlkes

EPICS Collaboration Meeting – RDB SIG

June 12, 2006

Environment

- Oracle RDB
- IRMISBase data structure
- SNS data structure
- XAL Framework (See XAL Status presentation by Tom Pelaia)

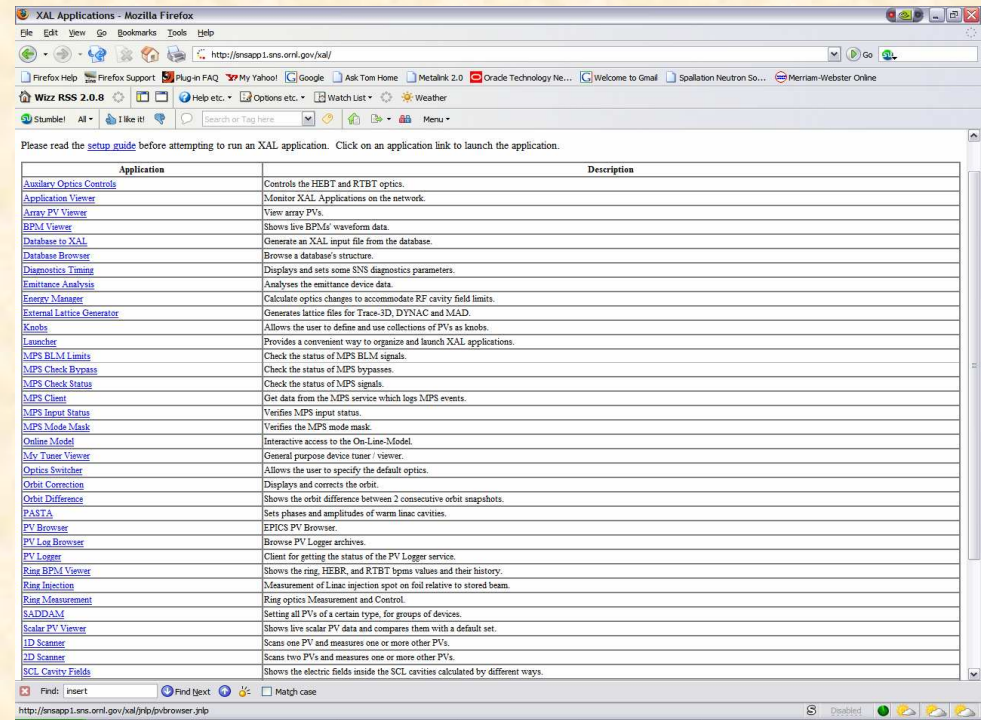


Philosophy

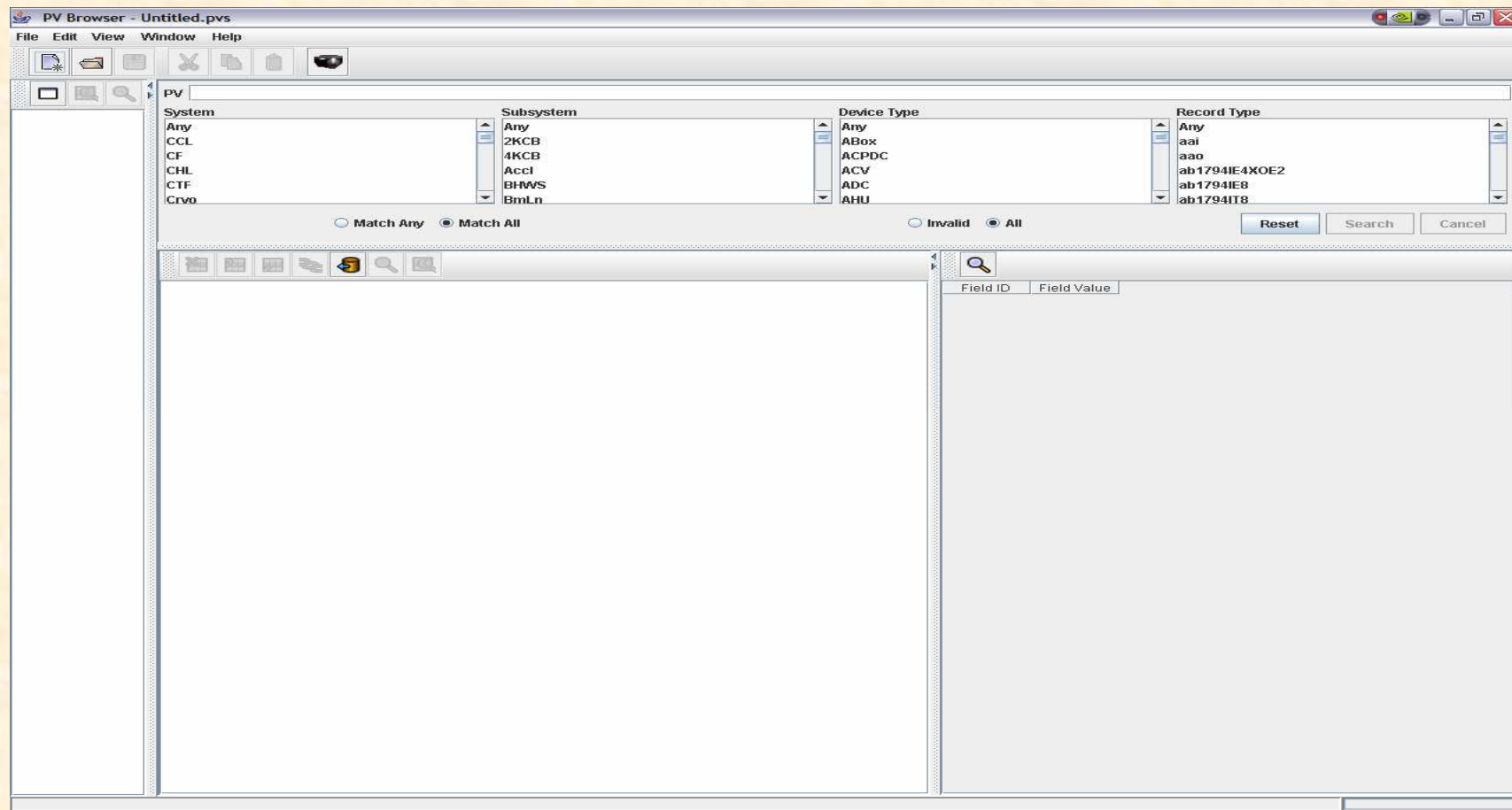
- **Integrate IRMISBase data with SNS data**
- **Use the XAL framework whose look and feel most SNS users are familiar with**
- **Simple RDB interaction through POJOs and database views to adapt IRMIS to SNS**
- **Tailor functions to SNS users**
- **But make UI configurable for anyone**

Installation

- Populate configuration table
- Set RDB connection parameters
- Install jars and JNLP files on web server

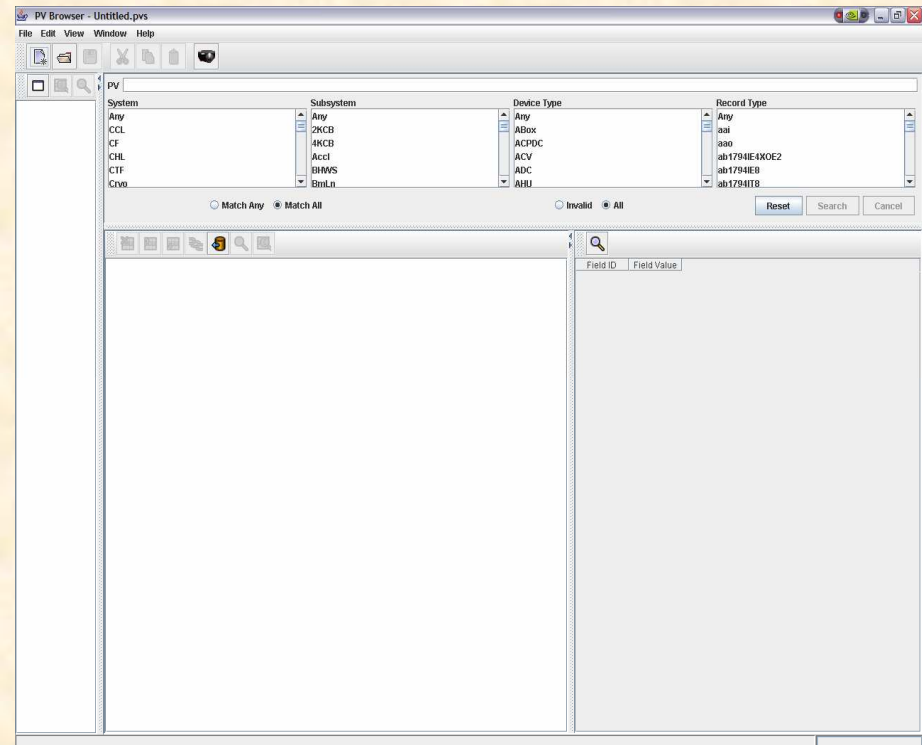


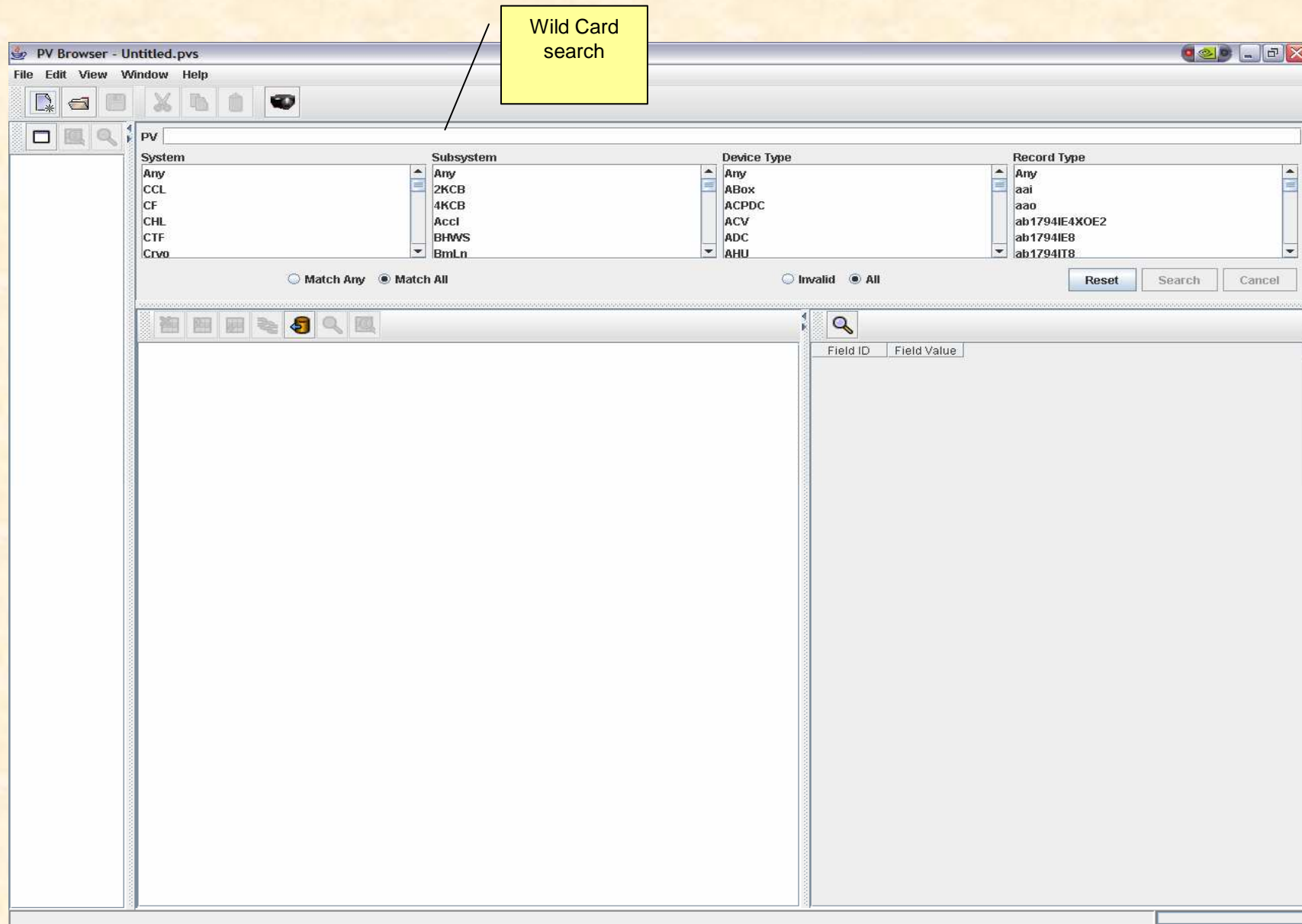
PV Browser

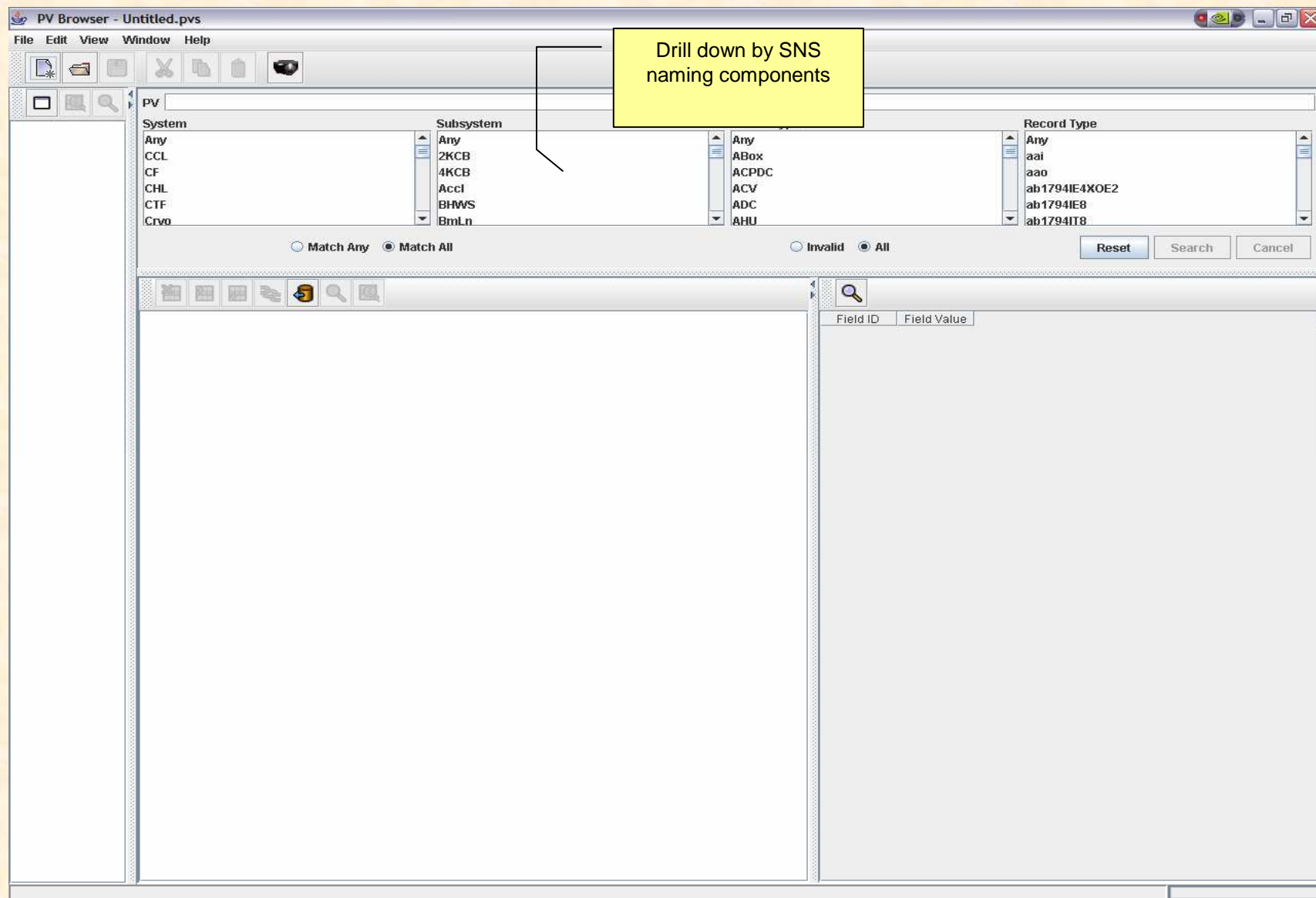


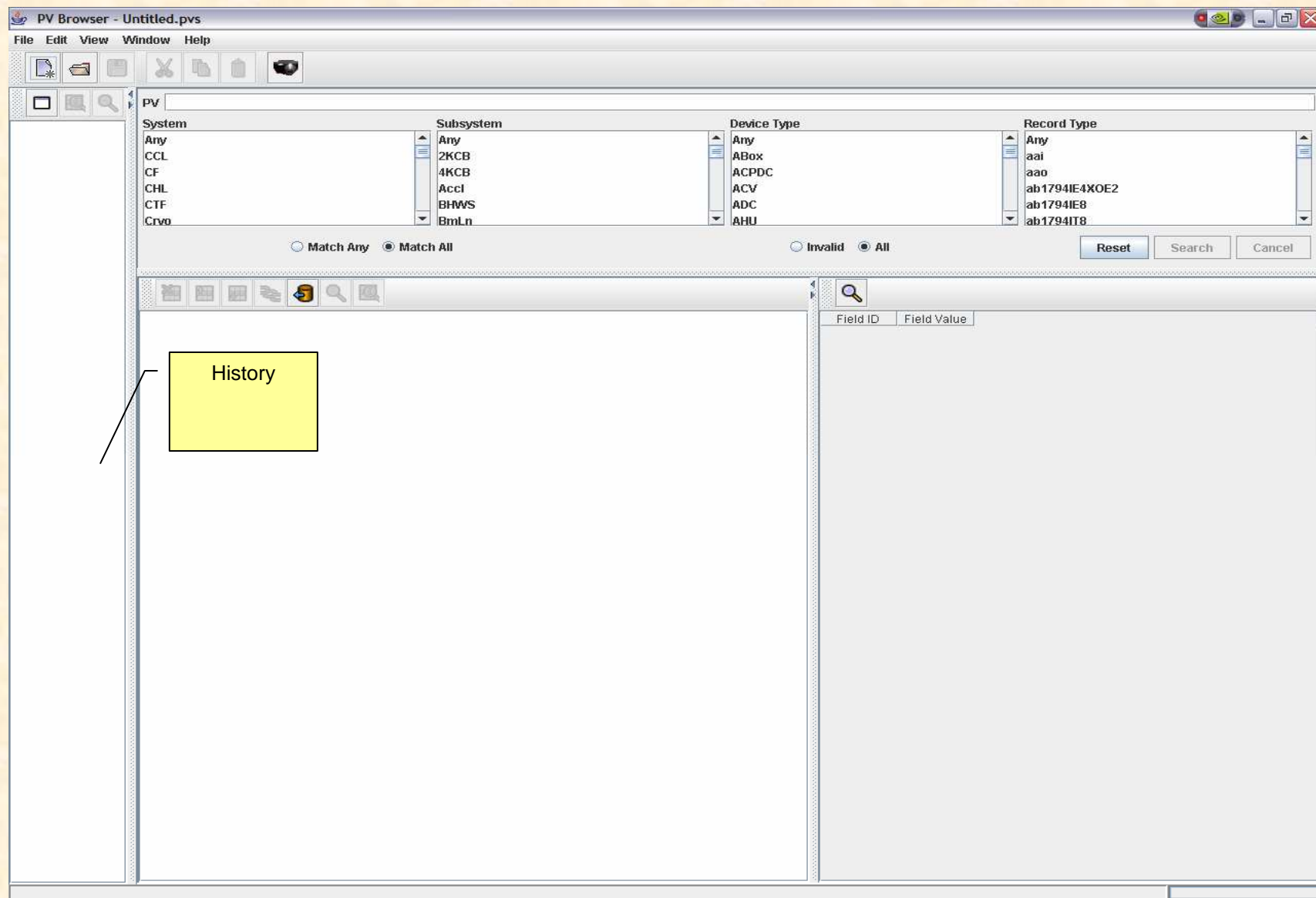
Startup

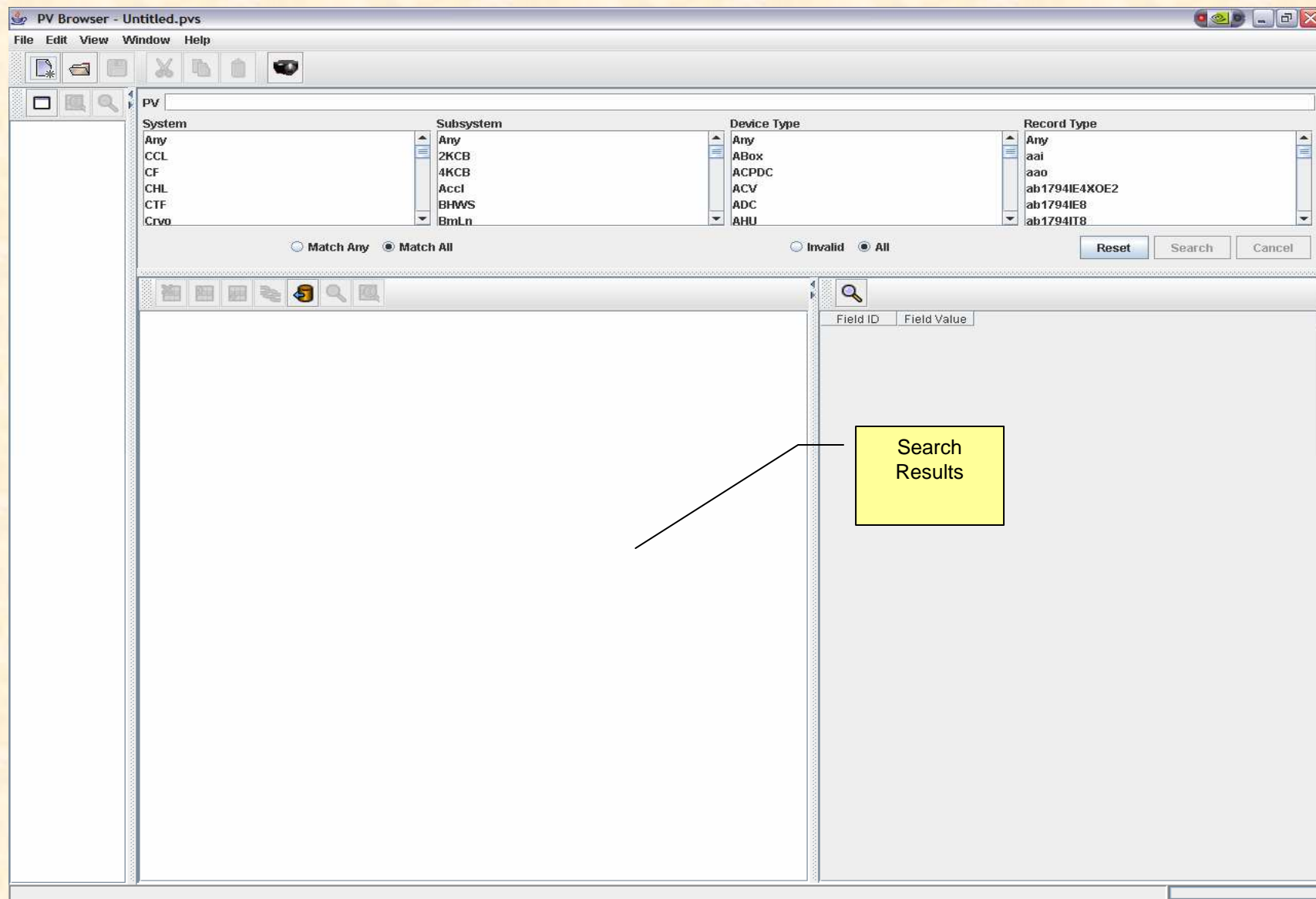
- Connects to RDB with a read only account
- Reads configuration table to determine objects to define

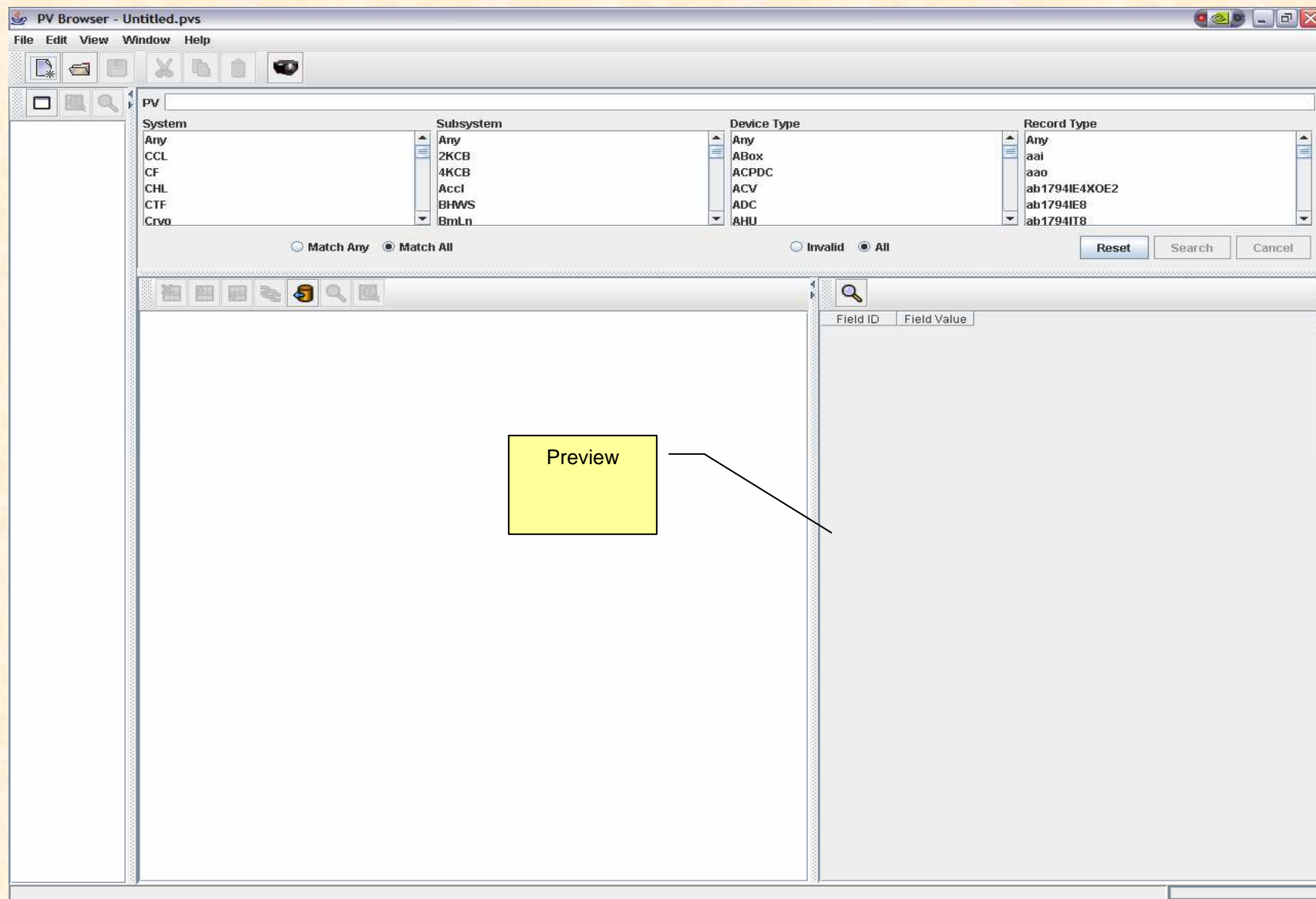












Search

PV Browser - Untitled.pvs*

File Edit View Window Help

System: Any, CCL, CF, CHL, CTF, Crvo
 Subsystem: Any, 2KCB, 4KCB, AccI, BHWS, BmLn
 Device Type: Any, ABox, ACPDC, ACV, ADC, AHU
 Record Type: Any, aal, aao, ab1794IE4XOE2, ab1794IE8, ab1794IT8

☐ Match Any ☒ Match All ☐ Invalid ☒ All

Reset Search Cancel

Field ID Field Value

CF_CU:AHU_XX2352A_LLGreen:Sts
 CF_CU:AHU_XX2352A_LLRed:Sts
 CF_CU:AHU_XX2400_LLGreen:Sts
 CF_CU:AHU_XX2400_LLRed:Sts
 CF_CU:AHU_XXNE2050AGreen:Sts
 CF_CU:AHU_XXNE2050ARed:Sts
 CF_CU:AHU_XXNE2351Green:Sts
 CF_CU:AHU_XXNE2351Red:Sts
 CF_CU:AHU_XXNE2352Green:Sts
 CF_CU:AHU_XXNE2352Red:Sts
 CF_CU:CF_AlarmActiveRed:Sts
 CF_CU:CF_AlarmActiveYellow:Sts
 CF_CU:CF_AlarmTemp1Red:Sts
 CF_CU:CF_AlarmTemp1Yellow:Sts
 CF_CU:CF_AlarmTemp2Red:Sts
 CF_CU:CHW_AlarmActiveRed:Sts
 CF_CU:CHW_AlarmActiveYellow:Sts
 CF_CU:CHW_AlarmTemp1Red:Sts
 CF_CU:CHW_AlarmTemp1Yellow:Sts
 CF_CU:CHW_AlarmTemp2Red:Sts
 CF_CU:CHW_AlarmTemp2Yellow:Sts
 CF_CU:CHW_AlarmTemp3Red:Sts
 CF_CU:CHW_AlarmTemp4Red:Sts
 CF_CU:CHW_AlarmTemp5Red:Sts
 CF_CU:CHW_XX4100_LLGreen:Sts
 CF_CU:CHW_XX4100_LLRed:Sts
 CF_CU:CHW_XX4100_LLGreen:Sts
 CF_CU:CHW_XX4601_LLGreen:Sts
 CF_CU:CHW_XX4601_LLRed:Sts
 CF_CU:CHW_XX4601_LLRed:Sts
 CF_CU:CHW_XX4601_LLRed:Sts
 CF_CU:CHW_XXRMP01Green:Sts
 CF_CU:CHW_XXRMP01Red:Sts
 CF_CU:CHW_XXRuptureGuardGreen:Sts

5385 Records, 0 Selected

So I used all invalid names for
my PV's. It drives that
database guy nuts!



Preview

PV Browser - Untitled.pvs*

File Edit View Window Help

System: Any, CCL, CF, CHL, CTF, Crvo
Subsystem: Any, 2KCB, 4KCB, AccI, BHWS, BmLn
Device Type: Any, ABox, ACPDC, ACV, ADC, AHU
Record Type: Any, aal, aao, ab1794IE4XOE2, ab1794IE8, ab1794IT8

Match Any Match All Invalid All

Reset Search Cancel

CF_CU:AHU_XX2352A_LLGreen:Sts
CF_CU:AHU_XX2352A_LLRed:Sts
CF_CU:AHU_XX2400_LLGreen:Sts
CF_CU:AHU_XX2400_LLRed:Sts
CF_CU:AHU_XXNE2050AGreen:Sts
CF_CU:AHU_XXNE2050ARed:Sts
CF_CU:AHU_XXNE2351Green:Sts
CF_CU:AHU_XXNE2351Red:Sts
CF_CU:AHU_XXNE2352Green:Sts
CF_CU:AHU_XXNE2352Red:Sts
CF_CU:CF_AlarmActiveRed:Sts
CF_CU:CF_AlarmActiveYellow:Sts
CF_CU:CF_AlarmTemp1Red:Sts
CF_CU:CF_AlarmTemp1Yellow:Sts
CF_CU:CF_AlarmTemp2Red:Sts
CF_CU:CHW_AlarmActiveRed:Sts
CF_CU:CHW_AlarmActiveYellow:Sts
CF_CU:CHW_AlarmTemp1Red:Sts
CF_CU:CHW_AlarmTemp1Yellow:Sts
CF_CU:CHW_AlarmTemp2Red:Sts
CF_CU:CHW_AlarmTemp2Yellow:Sts
CF_CU:CHW_AlarmTemp3Red:Sts
CF_CU:CHW_AlarmTemp4Red:Sts
CF_CU:CHW_AlarmTemp5Red:Sts
CF_CU:CHW_XX4100_LLGreen:Sts
CF_CU:CHW_XX4100_LLGreen:Sts
CF_CU:CHW_XX4100_LLRed:Sts
CF_CU:CHW_XX4100_LLRed:Sts
CF_CU:CHW_XX4601_LLGreen:Sts
CF_CU:CHW_XX4601_LLGreen:Sts
CF_CU:CHW_XX4601_LLRed:Sts
CF_CU:CHW_XX4601_LLRed:Sts
CF_CU:CHW_XXRMP01Green:Sts
CF_CU:CHW_XXRMP01Red:Sts
CF_CU:CHW_XXRuptureGuardGreen:Sts

PV: CF_CU:CF_AlarmActiveRed:Sts
Type: calcout
IOC: cf-ics-loc-cfcc
Boot Date: 05/24/2006 00:00:00
DB File: /ade/epics/locTop/R3.14.7/CF/Devel/db/CFCC_Alarms.db

Field ID	Field Value
SCAN	1 second
CALC	A B C D E
INPA	CF_CU:CF_AlarmTemp1Red:Sts
INPB	CF_CU:CF_AlarmTemp2Red:Sts
INPC	CF_CU:HW_XX4022_LLRed:Sts
INPD	CF_CU:HW_XX4022_LLRed:Sts
INPE	CF_CU:HW_XXLSH8910Red:Sts
HIHI	1
HHSV	MAJOR

5385 Records, 1 Selected

Probe

PV Browser - Untitled.pvs*

File Edit View Window Help

PV: CF*

System: Any, CCL, CF, CHL, CTF, Crvo

Subsystem: Any, 2KCB, 4KCB, AccI, BHWS, BmLn

Device Type: Any, ABox, ACPDC, ACV, ADC, AHU

Record Type: Any, aal, aao, ab1794IE4XOE2, ab1794IE8, ab1794IT8

Match Any Match All Invalid All

Reset Search Cancel

CF_CU:AHU_XX2352A_LLGreen:Sts
 CF_CU:AHU_XX2352A_LLRed:Sts
 CF_CU:AHU_XX2400_LLGreen:Sts
 CF_CU:AHU_XX2400_LLRed:Sts
 CF_CU:AHU_XXNE2050AGreen:Sts
 CF_CU:AHU_XXNE2050ARed:Sts
 CF_CU:AHU_XXNE2351Green:Sts
 CF_CU:AHU_XXNE2351Red:Sts
 CF_CU:AHU_XXNE2352Green:Sts
 CF_CU:AHU_XXNE2352Red:Sts
 CF_CU:CF_AlarmActiveRed:Sts
 CF_CU:CF_AlarmActiveYellow:Sts
 CF_CU:CF_AlarmTemp1Red:Sts
 CF_CU:CF_AlarmTemp1Yellow:Sts
 CF_CU:CF_AlarmTemp2Red:Sts
 CF_CU:CHW_AlarmActiveRed:Sts
 CF_CU:CHW_AlarmActiveYellow:Sts
 CF_CU:CHW_AlarmTemp1Red:Sts
 CF_CU:CHW_AlarmTemp1Yellow:Sts
 CF_CU:CHW_AlarmTemp2Red:Sts
 CF_CU:CHW_AlarmTemp2Yellow:Sts
 CF_CU:CHW_AlarmTemp3Red:Sts
 CF_CU:CHW_AlarmTemp4Red:Sts
 CF_CU:CHW_AlarmTemp5Red:Sts
 CF_CU:CHW_XX4100_LLGreen:Sts
 CF_CU:CHW_XX4100_LLRed:Sts
 CF_CU:CHW_XX4100_LRed:Sts
 CF_CU:CHW_XX4601_LLGreen:Sts
 CF_CU:CHW_XX4601_LLRed:Sts
 CF_CU:CHW_XX4601_LRed:Sts
 CF_CU:CHW_XXRMP01Green:Sts
 CF_CU:CHW_XXRMP01Red:Sts
 CF_CU:CHW_XXRuptureGuardGreen:Sts

PV: CF_CU:CF_AlarmActiveRed:Sts
 Type: calcout
 IOC: cf-ics-loc-cfcc
 Boot Date: 05/24/2006 00:00:00
 DB File: /ade/epics/locTop/R3.14.7/CF/Devel/db/CFCC_Alarms.db

Field ID	Field Value	Probe
VAL	0.0	
SCAN	1 second	6
CALC	A[I]B[I]C[I]D[I]E	A[I]B[I]C[I]D[I]E
INPA	CF_CU:CF_AlarmTemp1Red:Sts	CF_CU:CF_AlarmTemp1Red:Sts NPP NMS
INPB	CF_CU:CF_AlarmTemp2Red:Sts	CF_CU:CF_AlarmTemp2Red:Sts NPP NMS
INPC	CF_CU:HW_XX4022_LLRed:Sts	CF_CU:HW_XX4022_LLRed:Sts NPP NMS
INPD	CF_CU:HW_XX4022_LLRed:Sts	CF_CU:HW_XX4022_LLRed:Sts NPP NMS
INPE	CF_CU:HW_XX4022_LLRed:Sts	CF_CU:HW_XX4022_LLRed:Sts NPP NMS
HHSV	MAJOR	2

5385 Records, 1 Selected

View Links

PV Browser - CF_CU:CF_AlarmTemp1Red:Sts

File View Window Help

PV: CF_CU:CF_AlarmTemp1Red:Sts
 Type: cf-ics-ioc-cfcc
 Boot Date: 05/24/2006 00:00:00
 DB File: /ade/epics/iocTop/R3.14.7/CF/Devel/db/CFCC_Alarms.db

Field ID	Field Value
SCAN	1 second
CALC	A B C D E
INPA	CF_CU:AHU_AlarmActiveRed:Sts
INPB	CF_CU:CHW_AlarmActiveRed:Sts
INPC	CF_CU:EXH_AlarmActiveRed:Sts
INPD	CF_CU:PWSS_AlarmActiveRed:Sts
INPE	CF_CU:PW_AlarmActiveRed:Sts
FLNK	CF_CU:CF_AlarmActiveRed:Sts
HIHI	1
HHSV	MAJOR

5385 Records, 1 Selected

PV Browser - CF_CU:CF_AlarmActiveRed:Sts

File View Window Help

Device Type: Any, ABox, ACPDC, ACV, ADC, AHU
 Record Type: Any, aal, aao, ab1794IE4XOE2, ab1794IE8, ab1794IT8
☐ Invalid ☒ All
 Reset Search Cancel

CF_CU:CF_AlarmActiveRed:Sts
 ie: calcout
 : cf-ics-ioc-cfcc
 st Date: 05/24/2006 00:00:00
 File: /ade/epics/iocTop/R3.14.7/CF/Devel/db/CFCC_Alarms.db

Field ID	Field Value	Probe
L	0.0	
AN	1 second	6
LC	A B C D E	A B C D E
PA	CF_CU:CF_AlarmTemp1Red:Sts	CF_CU:CF_AlarmTemp1Red:Sts NPP NMS
PB	CF_CU:CF_AlarmTemp2Red:Sts	CF_CU:CF_AlarmTemp2Red:Sts NPP NMS
PC	CF_CU:HW_Xx4022_LLRed:Sts	CF_CU:HW_Xx4022_LLRed:Sts NPP NMS
PD	CF_CU:HW_Xx4022_LLRed:Sts	CF_CU:HW_Xx4022_LLRed:Sts NPP NMS
PE	CF_CU:HW_XxLSh8910Red:Sts	CF_CU:HW_XxLSh8910Red:Sts NPP NMS
HI	1	1.0
ISV	MAJOR	2

Map Links

PV Browser - Untitled.pvs*

File Edit View Window Help

CF_CU:CF_AlarmTemp1Red:Sts

CF_CU:CF_AlarmTemp1Red:Sts

CF_CU:AHU_AlarmActiveRed:Sts

CF_CU:CHW_AlarmActiveRed:Sts

CF_CU:EXH_AlarmActiveRed:Sts

CF_CU:PWSS_AlarmActiveRed:Sts

CF_CU:PW_AlarmActiveRed:Sts

CF_CU:CF_AlarmActiveRed:Sts

CF_CU:AHU_AlarmActiveRed:Sts

CF_CU:CHW_AlarmActiveRed:Sts

CF_CU:EXH_AlarmActiveRed:Sts

CF_CU:PWSS_AlarmActiveRed:Sts

CF_CU:PW_AlarmActiveRed:Sts

CF_CU:CF_AlarmActiveRed:Sts

CF_CU:CF_AlarmTemp2Red:Sts

CF_CU:HW_Xx4022_LLRed:Sts

CF_CU:HW_Xx4022_LLRed:Sts

CF_CU:HW_XxLSh8910Red:Sts

CF_CU:CF_AlarmActiveRed:Sts

CF_CU:CF_AlarmActiveYellow:Sts

CF_CU:CF_AlarmTemp1Red:Sts

CF_CU:CF_AlarmTemp1Yellow:Sts

CF_CU:CF_AlarmTemp2Red:Sts

CF_CU:CHW_AlarmActiveRed:Sts

CF_CU:CHW_AlarmActiveYellow:Sts

CF_CU:CHW_AlarmTemp1Red:Sts

CF_CU:CHW_AlarmTemp1Yellow:Sts

CF_CU:CHW_AlarmTemp2Red:Sts

CF_CU:CHW_AlarmTemp2Yellow:Sts

CF_CU:CHW_AlarmTemp3Red:Sts

CF_CU:CHW_AlarmTemp3Yellow:Sts

CF_CU:CHW_AlarmTemp4Red:Sts

CF_CU:CHW_AlarmTemp4Yellow:Sts

CF_CU:CHW_AlarmTemp5Red:Sts

CF_CU:CHW_Xx4100_LLGreen:Sts

CF_CU:CHW_Xx4100_LLRed:Sts

CF_CU:CHW_Xx4100_LLRed:Sts

CF_CU:CHW_Xx4601_LLGreen:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_XxRMP01Green:Sts

CF_CU:CHW_XxRMP01Red:Sts

CF_CU:CHW_XxRuptureGuardGreen:Sts

5385 Records, 1 Selected

PV CF*

System Any CCL CF CHL CTF Crvo

Subsystem Any 2KCB 4KCB AccI BHWs BmLn

Device Type Any ABox ACPDC ACV ADC AHU

Record Type Any aal aao ab1794IE4XOE2 ab1794IE8 ab1794IT8

Match Any Match All Invalid All

Reset Search Cancel

CF_CU:AHU_Xx2352A_LLGreen:Sts

CF_CU:AHU_Xx2352A_LLRed:Sts

CF_CU:AHU_Xx2400_LLGreen:Sts

CF_CU:AHU_Xx2400_LLRed:Sts

CF_CU:AHU_XxNE2050AGreen:Sts

CF_CU:AHU_XxNE2050ARed:Sts

CF_CU:AHU_XxNE2351Green:Sts

CF_CU:AHU_XxNE2351Red:Sts

CF_CU:AHU_XxNE2352Green:Sts

CF_CU:AHU_XxNE2352Red:Sts

CF_CU:CF_AlarmActiveRed:Sts

CF_CU:CF_AlarmActiveYellow:Sts

CF_CU:CF_AlarmTemp1Red:Sts

CF_CU:CF_AlarmTemp1Yellow:Sts

CF_CU:CF_AlarmTemp2Red:Sts

CF_CU:CHW_AlarmActiveRed:Sts

CF_CU:CHW_AlarmActiveYellow:Sts

CF_CU:CHW_AlarmTemp1Red:Sts

CF_CU:CHW_AlarmTemp1Yellow:Sts

CF_CU:CHW_AlarmTemp2Red:Sts

CF_CU:CHW_AlarmTemp2Yellow:Sts

CF_CU:CHW_AlarmTemp3Red:Sts

CF_CU:CHW_AlarmTemp3Yellow:Sts

CF_CU:CHW_AlarmTemp4Red:Sts

CF_CU:CHW_AlarmTemp4Yellow:Sts

CF_CU:CHW_AlarmTemp5Red:Sts

CF_CU:CHW_Xx4100_LLGreen:Sts

CF_CU:CHW_Xx4100_LLRed:Sts

CF_CU:CHW_Xx4100_LLRed:Sts

CF_CU:CHW_Xx4601_LLGreen:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_Xx4601_LLRed:Sts

CF_CU:CHW_XxRMP01Green:Sts

CF_CU:CHW_XxRMP01Red:Sts

CF_CU:CHW_XxRuptureGuardGreen:Sts

PV: CF_CU:CF_AlarmActiveRed:Sts

Type: calcout

IOC: cfics-ipc-cfcs

Boot Date: 05/24/2006 00:00:00

DB File: /ade/epics/locTop/R3.14.7/CF/Devel/db/CFCC_Alarms.db

Field ID	Field Value	Probe
VAL		0.0
SCAN	1 second	6
CALC	A[B]C[D]E	A[B]C[D]E
INFA	CF_CU:CF_AlarmTemp1Red:Sts	CF_CU:CF_AlarmTemp1Red:Sts NPP NMS
INPB	CF_CU:CF_AlarmTemp2Red:Sts	CF_CU:CF_AlarmTemp2Red:Sts NPP NMS
INPC	CF_CU:HW_Xx4022_LLRed:Sts	CF_CU:HW_Xx4022_LLRed:Sts NPP NMS
INPD	CF_CU:HW_Xx4022_LLRed:Sts	CF_CU:HW_Xx4022_LLRed:Sts NPP NMS
INPE	CF_CU:HW_XxLSh8910Red:Sts	CF_CU:HW_XxLSh8910Red:Sts NPP NMS
HIHI	1	1.0
HHSV	MAJOR	2

Probe multiple PV's

PV Browser - Untitled.pvs*

File Edit View Window Help

PV: HEBT_Mag:PS_DCH30:I
Type: ai
IOC: ring-ps-ioc1
Boot Date: 05/15/2006 00:00:00
DB File: /ade/epics/iocTop/R3.14.7/magnets/R2-6-9/ringMag/db/psc-ring-ps-ioc1.db

Field ID	Field Value	Probe
VAL	1.5182402...	Measured Current Readback
DESC	.1 second	Measured ...
SCAN	PSC	9
DTYP	PSC	9
FLNK	HEBT_Mag:PS_DCH30:CPF.VA	HEBT_Mag...
INP	#C4 S3 @ADCB	#C4 S3 @A...
PREC	3	3
EGUF	2.000000e+01	20.0
EGUL	-2.000000e+01	-20.0
HOPR	2.000000e+01	20.0
LOPR	-2.000000e+01	-20.0
ADEL	1.000000e-01	0.1
MDEL	2.000000e-02	0.02
HIHI	1.600000e+01	16.0
HIGH	1.200000e+01	12.0
LOW	-1.200000e+01	-12.0
LOLO	-1.600000e+01	-16.0
SMOO	8.000000e-01	0.8
HYST	4.000000e-02	0.04
ASLO	1.000000e+00	1.0
AOFF	0.000000e+00	0.0
EGU	Amps	Amps
LINR	LINEAR	2
HHSV	MAJOR	2
HSV	MINOR	1
LSV	MINOR	1
LLSV	MAJOR	2

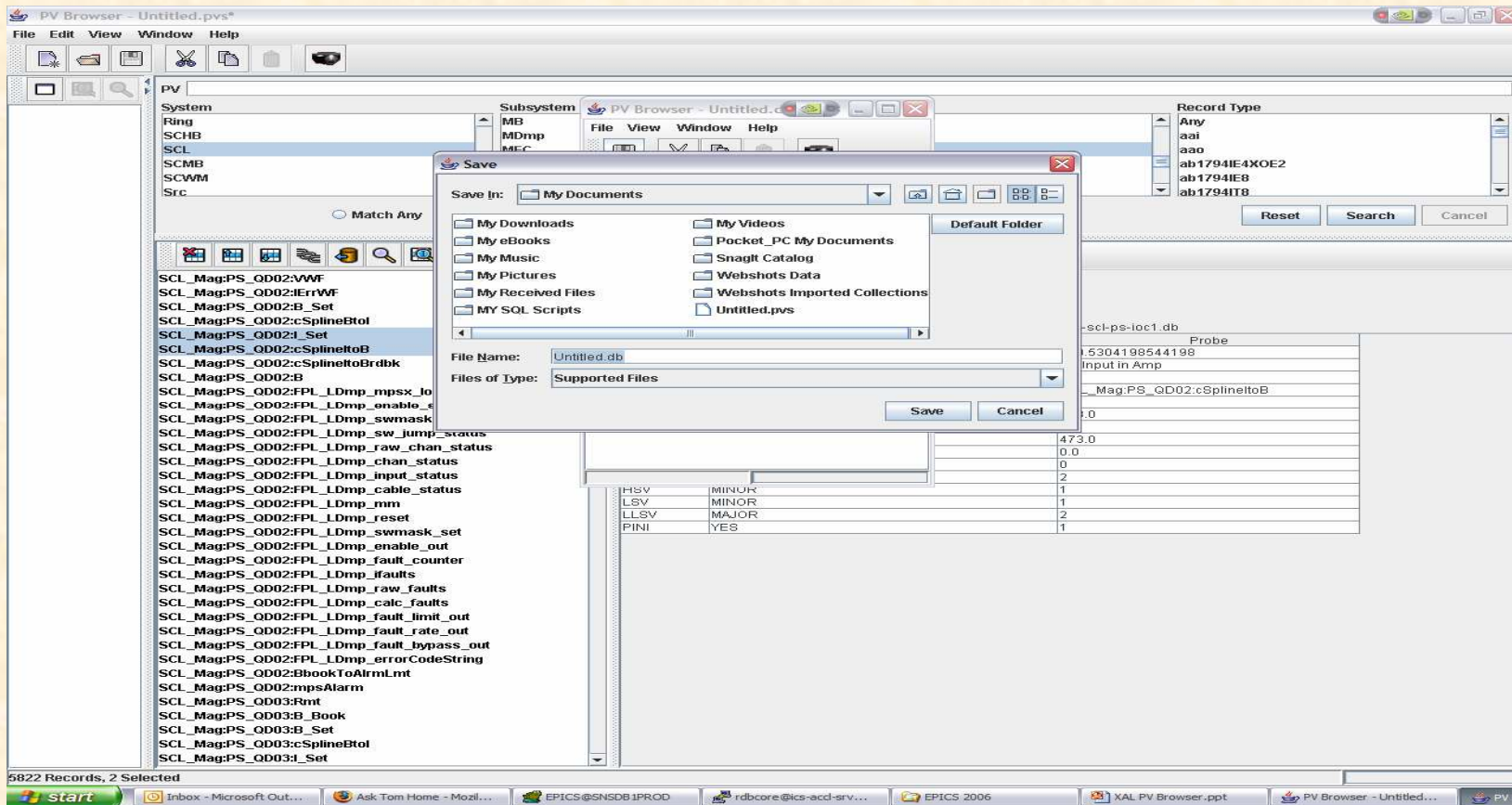
PV: HEBT_Mag:PS_DCH30:V
Type: ai
IOC: ring-ps-ioc1
Boot Date: 05/15/2006 00:00:00
DB File: /ade/epics/iocTop/R3.14.7/magnets/R2-6-9/ringMag/db/psc-ring-ps-ioc1.db

Field ID	Field Value	Probe
VAL	0.0081170436280492...	Voltage Readba...
DESC	.1 second	Voltage Readback
SCAN	PSC	9
DTYP	PSC	9
INP	#C4 S3 @ADCC	#C4 S3 @ADCC
PREC	3	3
EGUF	3.500000e+01	35.0
EGUL	-3.500000e+01	-35.0
HOPR	3.500000e+01	35.0
LOPR	-3.500000e+01	-35.0
ADEL	3.500000e-01	0.35
MDEL	3.500000e-02	0.035
HIHI	2.800000e+01	28.0
HIGH	2.100000e+01	21.0
LOW	-2.100000e+01	-21.0
LOLO	-2.800000e+01	-28.0
SMOO	8.000000e-01	0.8
HYST	7.000000e-02	0.07
EGU	Volts	Volts
LINR	LINEAR	2
HHSV	MAJOR	2
HSV	MINOR	1
LSV	MINOR	1
LLSV	MAJOR	2

HEBT_Mag:PS_DCH30:V
HEBT_Mag:PS_DCH28:FPL_IDmp_sw_jump_status
HEBT_Mag:PS_DCH28:FPL_IDmp_swmask
HEBT_Mag:PS_DCH28:FPL_IDmp_swmask_set
HEBT_Mag:PS_DCH30:I
HEBT_Mag:PS_DCH30:V
HEBT_Mag:PS_DCH30:OI
HEBT_Mag:PS_DCH30:OT

33920 Records, 2 Selected

Export to .db file



Future

- **Advanced search**
- **Seamless export to VDCT**
- **Differences between IOC boots**